

330 CMR: DEPARTMENT OF AGRICULTURAL RESOURCES

330 CMR 31.00: PLANT NUTRIENT APPLICATION REQUIREMENTS FOR AGRICULTURAL LAND AND ~~LAND NOT USED FOR NON-AGRICULTURAL LAND, NON-AGRICULTURAL TURF, AND LAWNS~~ PURPOSES

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31.01: Purpose

330 CMR 31.00 establishes limitations on the application of plant nutrients to lawns and non-agricultural turf to prevent these non-point source pollutants from entering the surface and groundwater resources of the Commonwealth of Massachusetts. These state-wide limitations on plant nutrient applications will enhance the ability of municipalities to maximize the credits provided in the National Pollution Discharge Elimination System permits issued by the United States Environmental Protection Agency. 330 CMR 31.00 further ensure that plant nutrients are applied to agricultural land in an effective manner to provide sufficient nutrients for plant growth while minimizing the impacts of the nutrients on water resources in order to protect human health and the environment. ~~330 CMR 31.03 and 31.04 shall not be enforced until six months after June 5, 2015 in order for the Department to provide appropriate educational and technical assistance to the agricultural operations subject to 330 CMR 31.00.~~

31.02: Definitions

As used throughout 330 CMR 31.00, the following terms shall have the following meanings, unless the context clearly indicates otherwise:

Agricultural Byproducts - secondary organic materials produced from the raising of animals and crops as part of agronomic, horticultural, silvicultural, or livestock operations including, but not limited to, animal manure, liquid manure, bedding materials, plant stalks, leaves, and other vegetative matter and byproducts from the on-farm processing of fruits, vegetables, dairy and other food products.

Agricultural Crop - any plant or part of a plant produced primarily for sale, consumption, propagation, or other use by humans or animals.

Agricultural Land - land used for agriculture or farming as defined in M.G.L. c. 128, § 1A.

Agricultural Operation - a business engaged in agriculture or farming as defined in M.G.L. c. 128, § 1A. For the purposes of 330 CMR 31.00, an agricultural operation shall include all operations, whether conducted on one or more parcels of land within the Commonwealth, which are owned or operated by the same person.

Agricultural Process Water - process water that is generated as a byproduct from Agricultural Operation activities and processing of agricultural products.

Agricultural Process Water - includes, but is not limited to, water generated as a byproduct in a milking parlor, milkhouse, or bottling operation.

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Animal Manure - animal excrement which is produced at an agricultural operation. The term includes materials such as bedding, milking parlor process water, milkhouse process water and other materials after commingling with that excrement.

Applicator - a ~~p~~Person who applies any type of plant nutrient whether for hire or as the owner or operator of the ~~a~~Agricultural ~~o~~Operation or land.

Biosolids - any thickened liquid, suspended or settled solid, or dried residue extracted from sewage at a sewage treatment plant, including domestic sewage, that:

- (a) contains recognized plant nutrients, or liquid byproducts, that meet federal and state regulations for beneficial use by land application or other methods; and
- (b) is regulated as sewage sludge and septage pursuant to 310 CMR 32.00: *Land Application of Sludge and Septage*.

Bottling Process Water - process water that is generated with the washing and rinsing associated with the bottling of agricultural products. Bottling process water does not include process water from bottling operations not directly associated with, and located on the same property of, the agricultural operation performing the bottling, or stand alone bottling operations.

Buffer or Vegetated Buffer - a permanent strip of dense perennial vegetation established parallel to the contours of, and perpendicular to, the dominant slope of the field built for the purposes of slowing water runoff, enhancing water infiltration and minimizing the risk of any potential nutrients from leaving the field and reaching surface waters.

Coarse Textured Soil - a soil identified by the United States Department of Agriculture as having textures of loamy fine sand, loamy sand, or sand.

~~Cover Crop - a crop planted not for harvest but mainly to manage and improve soil and water quality, reduce erosion, reduce weed and other pest pressure, and enhance biodiversity in an agroecosystem.~~

Crop Nutrient Needs - the primary nutrient requirements of a crop determined as pounds of nitrogen (N), phosphorus (P_2O_5), and potassium (K_2O) required for production of a crop yield unit.

Department - the ~~Commonwealth of~~ Massachusetts Department of Agricultural Resources.

Digestate - the material remaining after the anaerobic digestion process comprised of undigested solids and the liquid fraction of the input material.

Fertilizer - commercially produced fertilizers used as soil and plant amendments, containing a guaranteed analysis of primary nutrients; does not include a product blended from organic compost or natural organic fertilizer.

Frequently Flooded Soils - a frequency class in which flooding, ponding, or saturation is likely to occur often under usual weather conditions (more than fifty percent (50%) chance in any year, or more than 50 times in 100 years).

Frozen Soil - soil that is ~~frozen anywhere between the first 0.5 inches and eight inches of soil as measured from the ground surface-frozen at least two inches deep.~~

Gravelly Soil - soil containing material that is 15% to 50%, by volume, rounded or angular rock fragments, not prominently flattened, up to three inches in diameter.

Growing Season - the part of the year during which climatic conditions allow plants to grow in an outdoor environment.

Heavy Rain - rainfall greater than or equal to 2 inches in a 24 hour period and forecast keyword is "likely."

Impervious Surface - means any structure, surface, or improvement that reduces or prevents absorption of storm water into land, and includes concrete, asphalt, paver blocks, gravel, decks,

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patios, elevated structures, and other similar structures, surfaces, or improvements.

Incorporation - the mixing of fertilizer ~~or~~ other materials with the surface soil using standard agricultural practices, such as tillage.

In-field Stacking - the practice of stacking solid ~~a~~Animal ~~m~~Manure or agricultural byproducts on cropland, hayland and pasture areas to be applied at a later time to the ~~a~~Agricultural ~~l~~Land as ~~p~~Plant ~~n~~Nutrients.

~~Injection - the placement of liquid fertilizer material beneath the surface of the soil in the crop root zone using equipment specifically designed for this purpose.~~

Label - the display of all written, printed, or graphic matter on the immediate container or a statement accompanying a fertilizer or soil conditioner.

~~31.02: continued~~

~~Lawn or Non-agricultural Turf - any non-agricultural land area that is covered by any grass species, excluding flower or vegetable gardens, pasture, hay land, trees, shrubs, turf grown on turf farms or any form of agricultural production or use.~~

Lawn Patch Product - a premixed blend of grass seed, fertilizer, and mulch.

Management Unit - an area sharing common characteristics, including soil type, nutrient content, and plant type or crop produced, so that nutrients can be recommended and managed in a uniform and consistent manner.

Massachusetts NRCS Phosphorus Runoff Index or P Runoff Index - a procedure used by the ~~Natural~~Resources Conservation Services that uses characteristics of soils, landforms, and management practices to identify potential risk of phosphorus losses from soils to waters.

Milkhouse Process Water - residual milk and wash water that is generated with the normal operation of a milkhouse. Milkhouse ~~p~~Process ~~w~~Water does not include the process water containing large volumes of milk or contamination resulting from bulk tank failure or other operation failures, which shall not be land applied.

Natural Organic Fertilizer - a fertilizer product that is derived from either a plant or animal product containing one or more elements, other than carbon, hydrogen and oxygen, which are essential for plant growth. These materials may be subject to biological degradation processes under normal conditions of aging, rainfall, sun-curing, air drying, composting, rotting, enzymatic or anaerobic or aerobic bacterial action or any combination of those conditions. These materials shall not be mixed with synthetic materials or changed in any physical or chemical manner from the material's initial state except by manipulations such as drying, cooking, chopping, grinding, shredding, hydrolysis or pelleting.

Non-Agricultural Land - land that is not in agricultural production or used as part of an Agricultural Operation.

Non-Agricultural Turf or Lawn- any non-agricultural land area that is covered by any grass species, excluding flower or vegetable gardens, pasture, hay land, trees, shrubs, turf grown on turf farms or any form of agricultural production or use.

Non-professional - any person who applies a plant nutrient and is not for-hire or does not perform the application as part of his or her employment.

NRCS - the Natural Resources Conservation Services of the United States Department of Agriculture.

Nutrient Application Rate - the quantity of primary nutrients, as total nitrogen (N), available phosphate (P₂O₅), and soluble potash (K₂O) used to supply crop or plant nutrient needs.

Nutrient Content - the percentage ~~by weight~~ of any primary nutrient, as total nitrogen (N), available phosphate (P₂O₅), or soluble potash (K₂O), in any type or source of plant

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nutrients.

~~Nutrient Management Plan or Plan—a written plan to manage the amount, placement, timing, and application of plant nutrient materials in order to minimize nutrient loss or runoff and to maintain the productivity of soil when growing agricultural products.~~

Operator - a person who manages and/or owns an agricultural operation.

Organic Compost - the biologically stable humus-like material derived from composting or the aerobic, thermophilic decomposition of organic matter.

Person - any individual, partnership, corporation, firm, association, authority, trust or group, including, but not limited to, a municipality, county, the Commonwealth and its agencies, and the federal government.

Phosphorus Containing Fertilizer - fertilizer labeled for use on lawn or non-agricultural turf in which the available phosphate content is greater than 0.67% by weight, excluding ~~o~~Organic ~~c~~Compost and ~~n~~Natural ~~o~~Organic ~~f~~Fertilizer.

31.02: continued

Plan or Nutrient Management Plan - a written plan to manage the amount, placement, timing, and application of plant nutrient materials in order to minimize nutrient loss or runoff and to maintain the productivity of soil when growing agricultural products.

Plant Nutrient - a substance that contains one or more of the Primary Nutrients of nitrogen, phosphorus, ~~or potassium, or any recognized Plant Nutrient,~~ including ~~but not limited to, aAnimal mManures, fFertilizer, oOrganic cCompost as Fertilizer, nNatural oOrganic fFertilizer, aAgricultural bByproducts, dDigestate, bBiosolids or combinations thereof. and which is intended to be used as a source of nutrients for Agricultural Land, Non-Agricultural Land, Non-Agricultural Turf, and Lawns.~~

Primary Nutrient - ~~the macronutrientselements essential for plant growth which are an element that is essential for normal plant growth and that includes~~ total nitrogen (N), phosphorus (P), and potassium (K).

Retailer - any person who sells fertilizer.

~~Renovation- Turf improvement involving replanting into existing live and/or dead vegetation. the P~~process of replacing the turf plants on a site without making changes to the soil or grade, ~~which- dDoes not normally include total removal of existing vegetation, but usually may~~ includes eradication of the existing stand with non-selective herbicides or extended covering. ~~This mMay also include superficial cultivation in the interest of promoting seed to soil contact.~~

Saturated Soil - soil soaked with moisture so that it cannot absorb any more liquid.

Snow Covered Soil - soil covered by one inch or more of snow or by one-half inch or more of ice.

Soil Test - a technical analysis of soil conducted by a laboratory using methods and procedures recommended by the University of Massachusetts Amherst Extension ~~Program~~ as appropriate for Commonwealth soils.

Stackable Agricultural Byproduct - ~~aAgricultural bByproducts mMaterial~~ with equal or less than ~~sixty percent (60%)~~ moisture content.

Surface Waters - all waters other than groundwaters within the jurisdiction of the Commonwealth, including, without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, coastal waters and vernal pools as defined by 314 CMR. 4.00: *Massachusetts Surface Water Quality Standards*. ~~For the purpose of 330 CMR 31.00, Surface waters shall not include areas where the sole purpose is to grow crops, including but not limited to, interior ditches, channels, canals, irrigation ponds or tailwater recovery ponds, provided that there is no discharge to waters of the Commonwealth.~~

UMass - the University of Massachusetts Amherst Extension.

UMass Guidelines - the University of Massachusetts Amherst Extension ~~published~~ guidelines ~~for accepted and/or best management practicesand/or materials developed by UMass~~ for agricultural crops, Animal Manure management, ~~pPlant nNutrient~~ use and application, and turf, which have been established by the University of Massachusetts Amherst Extension and ~~shall be madeare~~ available on the Department's website. ~~at www.mass.gov/eea/agencies/agr/about/divisions/massachusetts-ag-bmps.html.~~

USDA - United States Department of Agriculture.

Water-soluble Nitrogen - nitrogen that is readily soluble in water and that is quickly available to the plant.

Waters of the Commonwealth - all waters within the jurisdiction of the ~~C~~ommonwealth, including, without limitation, rivers, streams, lakes, ponds, springs,

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impoundments, estuaries, coastal waters and groundwaters, and vernal pools as defined in M.G.L. c. 21, § 26A.

Zone A - the land area between the surface water source and the upper boundary of the bank; the land area within a 400 foot lateral distance from the upper boundary of the bank of a Class A surface water source, as defined in 314 CMR 4.05(3)(a): *Class A*; and the land area within a 200 foot lateral distance from the upper boundary of the bank of a tributary or associated surface water body, as defined by 310 CMR 22.00: *Drinking Water*.

Zone I of a Public Water Supply Well - the protective radius required around a public water supply well or wellfield regulated by 310 CMR 22.00: *Drinking Water*. For public water system wells with approved yields of 100,000 gpd or greater, the protective radius is 400 feet. Tubular wellfields require a 250-foot protective radius. Protective radii for all other public water system wells are determined by the following equation: Zone I radius in feet = (150 x log of pumping rate in gpd) - 350. This equation is equivalent to the chart in the Guidelines and Policies for Public Water Systems. A default Zone I radius or a Zone I radius otherwise computed and determined by the Department shall be applied to transient non-community (TNC) and non-transient non-community (NTNC) wells when there is no metered rate of withdrawal or no approved pumping rate. In no case shall the Zone I radius be less than 100 feet.

31.03: Plant Nutrient Application Requirements for Agricultural Land

(1) Any Person who applies, or authorizes any Person by way of service contract or other arrangement to apply, Plant Nutrients to Agricultural Land shall:

- (a) Apply Plant Nutrients according to UMass Guidelines~~-, if available. Any application of Biosolids shall also be done in accordance with the requirements of 310 CMR 32.00: Land Application of Sludge and Septage;~~
- (b) Not apply Plant Nutrients directly to ~~S~~surface ~~-W~~waters;
- (c) ~~Not apply Plant Nutrients to Saturated Soil unless normal operation requires activities to take place at a time when such a condition exists;~~
- (d) ~~Not apply to Frequently Flooded Soils during a period when flooding is expected;~~
- (e) ~~Not apply Plant Nutrients to Frozen Soil or Snow Covered Soil, except for the conditions outlined in 31:03(3); and~~
- (f) ~~Apply Biosolids in accordance with the requirements of 310 CMR 32.00: Land Application of Sludge and Septage.~~
- ~~(a) Not apply Plant Nutrients to saturated ground or on soils that are frequently flooded during a period when flooding is expected; and~~
- ~~(b) Not apply Plant Nutrients to frozen soil or snow covered soils.~~

(2) Application Setbacks.

- (a) No application of Plant Nutrients shall be made:
 - 1. within 100 feet of Surface Waters used for public water supplies;
 - 2. in a Zone I of a Public Water Supply Well;
 - 3. using a broadcast method either with or without ~~I~~ncorporation within ~~fifty (50)~~ feet from Surface Waters unless a Vegetated Buffer is present, in which case a setback of ~~twenty-five (25)~~ feet applies;
 - 4. by ~~directed spray band or side dress application~~ or ~~I~~njection of ~~P~~plant ~~N~~utrients within ~~10ten~~ feet from Surface Waters; ~~or~~
 - 5. on pastures and hayfields within ten ~~(10)~~ feet from ~~S~~surface ~~W~~waters.
- (b) ~~These application setbacks shall not apply to crop growing systems that operationally require proximity to surface waters, provided such applications are done in accordance with UMass Guidelines for such crop growing systems Except for the application setback in a Zone I, the setbacks in 31.03(2)(a) shall not apply to crop growing systems that operationally require proximity to Surface Waters, provided such applications are done in accordance with UMass Guidelines for such crop growing systems.~~

~~(3) Fall and Winter Applications of Agricultural Byproducts or Agricultural Process Water.~~

- ~~(a) Fall (September 15th through December 15th). Fall applications of Agricultural Byproducts or Agricultural Process Water shall only be done to fields with an adequate vegetative cover greater than 30% unless the following conditions exist:~~
 - ~~1. Animal Manure is deposited directly by livestock;~~
 - ~~2. the application is made to a pasture or hayfield;~~
 - ~~3. the application is of Organic Compost; or~~

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- ~~4. the application is of Agricultural Process Water to a growing crop.~~
- ~~(b) Winter (December 16th through March 1st).~~
- ~~1. Winter applications of Agricultural Byproduct and Agricultural Process Water shall only be made if:~~
- ~~a. the operation has inadequate storage and available storage capacity limit has been reached;~~
 - ~~b. the Agricultural Byproduct is non-stackable (material containing equal to or more than 60% water); and~~
 - ~~c. there is no other reasonable option to manage it.~~
- ~~2. The restrictions in 330 CMR 31.03(3)(b)1.a. through c. for winter application of Agricultural Byproducts or Agricultural Process Water shall not apply to:~~
- ~~a. Animal Manure deposited directly by livestock;~~
 - ~~b. application of Agricultural Byproducts to certain vegetable crops, small grain crops, and small fruit crops; or~~
 - ~~c. a livestock operation generating less than 50,000 gallons of Animal Manure or less than 270 cubic yards of solid Animal Manure, which corresponds to estimated Animal Manure production of 15 lactating dairy cows housed in a barn for six and one half months per year.~~
- ~~3. With the exception of Animal Manure deposited directly by livestock, all winter applications of Agricultural Byproduct or Agricultural Process Water shall:~~
- ~~1. not be made on land with a slope greater than 7%;~~
 - ~~2. not be made within 200 feet of surface water;~~
 - ~~3. minimize the rates of application and available acreage used to the greatest extent practical; and~~
 - ~~4. not be made unless there is at least 30% crop residue or a vegetative cover crop present in the field receiving the application.~~

(3) Limitations on the Applications of Agricultural Byproducts or Agricultural Process Water to Frozen Soil or Snow Covered Soil.

(a) Applications of Agricultural Byproducts and Agricultural Process Water to Frozen Soil or Snow Covered Soil shall only be made if:

- 1. the Agricultural Operation has inadequate storage and anticipates exceeding the available storage capacity limit during the time of the year that Frozen Soils and Snow Covered Soils typically occur;
- 2. is not a Stackable Agricultural Byproduct; and
- 3. there is no other reasonable management option.

(b) All applications of Agricultural Byproduct or Agricultural Process Water to Frozen Soil or Snow Covered Soil shall:

- 1. not be made to areas where slopes are greater than seven percent (7%) when applying solid materials;
- 2. not be made to areas where slopes are greater than two percent (2%) when applying liquid materials;
- 3. not be made within 200 feet of Surface Water;
- 4. minimize the rates of application and available acreage used to the greatest extent practical; and
- 5. not be made unless there is at least thirty percent (30%) crop residue or a vegetative cover present in the field receiving the application.

(c) The restrictions set forth in 330 CMR 31.03(3)(a) shall not apply to:

- 1. Animal Manure deposited directly by livestock; or
- 2. a livestock operation generating less than 50,000 gallons of Animal Manure or less than 270 cubic yards of solid Animal Manure, which corresponds to estimated Animal Manure production of fifteen (15) lactating dairy cows housed in a barn for six and one half months per year.

31.03: continued

(4) Temporary In-field Stacking of Stackable Agricultural Byproducts as a part of land application of this material is permissible throughout the year ~~if the following~~provided the following requirementsconditions are met:

(a) Any material stacked in a temporary field stockpile shall be land applied in the first spring season following the placement of the stockpile; and

(b) The stacks shall be constructed using UMass Guidelines, or if none are available, then using accepted industry practices, and are:

1. placed on appropriate soils, excluding Coarsely Textured Soils or Gravelly Soils;
2. at least 100 feet from any Surface Waters or, if a Vegetated Buffer is in place, at least thirty five (35) feet from ~~any such water~~Surface Waters;
3. outside the Zone I of a Public Water Supply well;
4. at least 200 feet from any residence ~~outside the~~not owned or leased by the Operator-property;
5. outside of Frequently Flooded Soils~~flood-prone areas and areas subject to ponding~~;
6. of shape and size that minimizes absorption of rainfall; and
7. covered when placed in a Zone A ~~of a public surface water supply~~ to minimize runoff.

~~(5) Any person who applies or authorizes any person by way of service contract or other arrangement to apply plant nutrients to ten or more acres of agricultural land or an agricultural operation shall also:~~

~~(a) develop a nutrient management plan prior to application, in accordance with the UMass Guidelines and requirements set forth in 330 CMR 31.04; and~~

~~(b) apply Plant Nutrients in accordance with the Plan for the land application site.~~

31.04: Requirements for Nutrient Management Plan and Testing ~~for Agricultural Land~~

~~(1) Any person who is required to develop a nutrient management plan as set forth in 330 CMR 31.03(5), shall include:~~

~~(a) Plan identification, which shall include:~~

- ~~1. Operator name and address;~~
- ~~2. location of all land under Plan;~~
- ~~3. date the Plan was prepared or updated;~~
- ~~4. period of time the Plan covers; and~~
- ~~5. name and contact information of the Person responsible for the Plan development;~~

~~(b) Map or aerial photograph, which shall include:~~

- ~~1. one or more maps or aerial photographs that identify the location and boundaries of fields or Management Unit;~~
- ~~2. field or Management Unit number or identifier;~~
- ~~3. acreage of each field or Management Unit;~~
- ~~4. location of Surface Waters, Zone A of public surface water supplies, if present, and Zone I of public water supply wells, if present; and~~
- ~~5. identification of the areas where Plant Nutrient applications are restricted based on setbacks set forth in 330 CMR 31.03;~~

~~(c) Current and/or planned crop and crop rotation for each field or management unit;~~

~~(d) Determination of nutrient needs for crop production. Crop Nutrient Needs shall be based on crop or cropping sequence, Soil Test results, plant tissue tests, if applicable, nutrient credits from preceding crops, and established crop removal rates;~~

~~(e) Determination of whether a Nutrient Application Rate should be based on nitrogen or phosphorus as a limiting factor.~~

- ~~1. High, above optimum or excessive phosphorus soils: Recommendations for fields with soils containing a high or excessive phosphorus level shall follow UMass Guidelines for high phosphorus soils. Recommendations for Nutrient Application Rates on high phosphorus soils may be refined by conducting a risk assessment of phosphorus loss to Surface Waters, including the use of the Massachusetts NRCS Phosphorus Runoff Index or UMass recommended risk assessment procedures for high phosphorus soils.~~
- ~~2. Optimum or less than optimum phosphorus soils: Nutrient Application Rates on fields with soil phosphorus levels that are optimum or less may be based on nitrogen;~~

~~31.04: continued~~

~~(f) Inventory of Agricultural Operation generated and stored Agricultural Byproducts and Agricultural Process Water to be land-applied. Determination of available Plant Nutrients from these sources should be based on sample analysis results of Plant Nutrient in stored Agricultural Byproducts and Agricultural Process Water for most accurate information. In the absence of sampling analysis results, book values for Plant Nutrient content in Agricultural Byproducts and process waters as published in the UMass Guidelines may be used for estimation of Plant Nutrient content in these materials;~~

~~(g) Determination of the planned Plant Nutrient Application Rates on individual fields or Management Units, which shall be based on:~~

- ~~1. Crop Nutrient Needs;~~
- ~~2. Soil Test or plant tissue test results;~~
- ~~3. application of all sources of Plant Nutrients;~~
- ~~4. results of phosphorus soil level assessment, if applicable;~~
- ~~5. nutrient credits from previous crops and Animal Manure applications, if applicable;~~
- ~~6. environmental factors such as setbacks and Buffers;~~
- ~~7. UMass Guidelines; and~~
- ~~8. the best information available at the time a Plan is prepared;~~

~~(h) Specification of the Plant Nutrient sources, timing and amount and method of application for each field or Management Unit; and~~

~~Guidance for implementation, operation and maintenance, and record keeping.~~

(1) Regardless of the number of acres, any Person who applies Plant Nutrients to Agricultural Land shall comply with UMass Guidelines for the agricultural commodity. This may include multiple UMass Guidelines specific to the commodity being grown. The information maintained as part of any UMass Guideline recommendation shall constitute the Plan for the Agricultural Operation.

(2) In the event that UMass Guidelines are not available, a Plan containing the information shall be maintained by any Person who applies Plant Nutrients to ten (10) or more acres of Agricultural Land:

(a) Plan identification, which shall include:

1. Operator name and address;
2. location of all land under the Plan;
3. date the Plan was prepared or updated;
4. period of time the Plan covers; and
5. name and contact information of the Person responsible for the Plan development.

(b) Map or aerial photograph, which shall include:

1. one (1) or more maps or aerial photographs that identify the location and boundaries of fields or Management Unit;
2. field or Management Unit number or identifier;
3. acreage of each field or Management Unit;
4. location of Surface Waters, Zone A, if present, and Zone I of Public Water Supply Wells, if present; and
5. identification of the areas where Plant Nutrient applications are restricted based on setbacks set forth in 330 CMR 31.03.

(c) If applicable, an inventory of generated and stored Agricultural Byproducts and Agricultural Process Water to be land-applied **must be kept**. A determination of available Plant Nutrients from these sources should be based on sample analysis results of Plant Nutrient in stored Agricultural Byproducts and Agricultural Process Water **or** book values for Plant Nutrient content in Agricultural Byproducts and process waters as published in the UMass Guidelines.

(d) Current and/or planned crop and crop rotation for each field or Management Unit.

(e) Determination of the planned Plant Nutrient Application Rates on individual fields or Management Units, which shall be based on:

1. Crop Nutrient Needs based on crop removal rate and yield goals;
2. Soil Test or plant tissue test results;
3. application of all sources of Plant Nutrients;
4. results of phosphorus soil level assessment, if applicable;
5. nutrient credits from previous crops and Animal Manure applications, if applicable;
6. environmental factors such as setbacks and Buffers;
7. UMass Guidelines; and
8. the best information available at the time a Plan is prepared.

(f) If applicable, determination of whether a Nutrient Application Rate should be based on

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nitrogen or phosphorus as a limiting factor.

1. high, above optimum or excessive phosphorus soils: Recommendations for fields with soils containing a high or excessive phosphorus level shall follow UMass Guidelines for high-phosphorus soils. Recommendations for Nutrient Application Rates on high-phosphorus soils may be refined by conducting a risk assessment of phosphorus loss to Surface Waters, including the use of the Massachusetts NRCS Phosphorus Runoff Index or UMass recommended risk assessment procedures for high-phosphorus soils.

2. optimum or less than optimum phosphorus soils: Nutrient Application Rates on fields with soil phosphorus levels that are optimum or less may be based on nitrogen;

(g) Specification of the Plant Nutrient sources, timing and amount and method of application for each field or Management Unit. Information to be maintained shall include:

1. Soil Test results and recommended Nutrient Application Rates;
2. quantities, analyses, and sources of Plant Nutrients applied;
3. dates and method(s) of nutrient application;
4. crops planted and estimated yields; and
5. all activities or protocols recommended or required by the Plan.

(h) Guidance for implementation, operation and maintenance, and record keeping.

(32) Record Keeping for Agricultural Land Under Ten (10) Acres and for which No UMass Guidelines are available.

The following must be kept by all Agricultural Operations that do not meet the Plan requirements set forth in 330 CMR 31.04(1) or (2) and records shall be maintained by the Operator and shall include:

- (a) Soil Test results and recommended Nutrient Application Rates;
- (b) Quantities, analyses, and sources of Plant Nutrients applied;
- (c) Dates and method(s) of Plant Nutrient application; and
- (d) Crops planted and estimated yields.

(43) Plan Maintenance, Updates, and Revisions.

~~(a) A Plan shall be maintained by the Operator at all times to meet Plan objectives, including but not limited to, review of annual crop-specific field-based plans, implementation of best management practices, strategies, or a phased-in approach identified in the Plan to achieve soil fertility within optimal ranges and protection of surface and ground water resources.~~

~~(b) Updates and revisions of a Plan shall be made based on review of crop-year specific information and operation specific information. Information used to develop crop-year-specific field-based plans shall be reviewed and updated annually, if necessary. Operation-specific information shall be reviewed and updated every three (3) years, or as necessary when changes occur, including, but not limited to, the following:~~

- ~~(a)1. If the planned crop or cropping rotation, or introduction of a new crop is not currently addressed in an existing Plan, unless the new crop will have fertility management similar to that crop originally planned;~~
- ~~(b)2. If nutrient source or Soil Test results indicate a change in nutrient recommendations;~~
- ~~(c)3. If ten percent (10%) or greater change in acreage managed, or thirty (30) acres, whichever is less; or~~
- ~~(d)4. If a change in Animal Manure production is ten percent (10%) or greater, and will require significant management adjustments.~~

(54) All testing of soils, plant tissue, Natural Organic Fertilizer, Agricultural Byproducts, and Agricultural Process Water done in accordance with 330 CMR 31.04(4) shall comply with the following:

(a) Each field, or group of fields with similar soils and crops and history of lime and Fertilizer applications ~~but with combined acreage not exceeding 20 acres~~, shall be Soil Tested at least every three years. Soil Tests shall include analyses for phosphorus, potassium, pH, and soil organic matter. Standard Soil Test analyses shall be conducted ~~using methods and procedures recommended by in accordance with~~ UMass Guidelines.;

31.04: continued

(b) Sampling and testing of Agricultural Byproducts and Agricultural Process Water shall comply with the following, unless UMass Guidelines require an alternative sampling and testing requirement:

1. materials shall be analyzed for nitrogen (total nitrogen, and ammonia-N), total phosphorus, total potassium, percent solids;
2. if there is no prior sampling history, testing shall be done annually for a minimum of three (3) consecutive years. The average of the results shall be used as a basis for nutrient allocation to fields. Materials shall then be tested every three (3) years;
3. samples of these materials shall be collected, prepared, stored, shipped and tested following UMass Guidelines; and
4. tests shall be performed whenever there is a significant change in animal numbers, species, diet, storage method, bedding materials, or additions of other Agricultural Byproducts, including those from offsite.

(c) Plant tissue testing shall be done in accordance with UMass Guidelines.

~~(5) When a Plan or testing requirement set forth in 330-CMR 31.04 is not recommended by the UMass Guidelines, the Plan shall comply with and reference the industry specific alternative recommendation.~~

(6) All Plan and record keeping information required under 333 CMR 31.04 shall be kept for three (3) years in either electronic or hard copy format and shall be made available for inspection by the Department upon request.

31.05: Limitations on the Application of Phosphorus Containing Fertilizer; Requirements for the Application of Plant Nutrients to Land Not Used for Agricultural Purposes Non-Agricultural Land, Non-Agricultural Turf, and Lawns

~~(1) No person may purchase and apply, or authorize any person, by way of service contract or other arrangement, to apply any Phosphorus Containing Fertilizer on Lawn or Non-agricultural Turf, except when:~~

~~(a) — a Soil Test taken not more than three years before the application indicates that additional phosphorus is needed for growth of that Lawn or Non-agricultural Turf;~~

~~or~~

~~(b) the Phosphorus Containing Fertilizer is used to establish new Lawn or Non-agricultural Turf on bare ground or as part of renovation of a Lawn or Non-agricultural Turf area. The use of phosphorus for the purposes of establishing a new Lawn or Non-agricultural Turf area is limited to the first growing season.~~

(1) No Person may purchase and apply, or authorize any Person, by way of service contract or other arrangement, to apply any Phosphorus Containing Fertilizer on Non-Agricultural Land, Non-Agricultural Turf, or Lawns except under the following conditions:

(a) A Soil Test, taken not more than three (3) years before the application, indicates that additional phosphorus is needed for growth; or

(b) The Phosphorus Containing Fertilizer is used to establish new Lawn or Non-Agricultural Turf on bare ground or as part of Renovation. The use of phosphorus for these purposes shall be limited to the first Growing Season.

~~(2) — If the soil test indicates that additional phosphorus is needed for growth of a lawn or non-agricultural turf, application of additional phosphorus shall not exceed the UMass Guidelines.~~

~~(3) No application of plant nutrients shall be made to lawns or non-agricultural turf:~~

~~(a) between December 1st and March 1st;~~

~~(b) to frozen soil, snow covered soil, saturated soil, soils that are frequently flooded, or soils when flooding is expected. An expectation of flooding includes, but is not limited to a prediction of heavy rain within a 24 hour forecast;~~

~~(c) within 20 feet of surface waters if using a broadcast application method; or within ten~~

~~feet of surface waters if using a drop spreader or rotary spreader with a deflector or a targeted spray;~~

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- ~~(d) within a Zone I of a public water supply well;~~
- ~~(e) within 100 feet of surface waters that are used for public water supplies;~~
- ~~or~~
- ~~(f) in an amount that is inconsistent with the annual recommended rate established by the UMass Guidelines for turf.~~

(2) For applications of all Plant Nutrients to Non-Agricultural Land, Non-Agricultural Turf, and Lawns, no application of Plant Nutrients shall be made:

- (a) To Frozen Soil, Snow-Covered Soil, Saturated Soil, Frequently Flooded Soils, or soils when flooding is expected. An expectation of flooding includes, but is not limited to a prediction of Heavy Rain within a twenty four (24) hour forecast;
- (b) Within twenty (20) feet of Surface Waters, if using a broadcast application method;
- (c) Within ten (10) feet of Surface Waters, if using a drop spreader or rotary spreader with a deflector or a targeted spray;
- (d) Within a Zone I of a Public Water Supply Well;
- (e) Within 100 feet of Surface Waters that are used for public water supplies; or
- (f) In an amount that is inconsistent with the annual recommended rate established by the UMass Guidelines for turf.
- (g) To any Impervious Surface, including parking lots, roadways, and sidewalks, by means of direct application, spills, overspray, or run-off to impervious areas.
 - 1. if such direct application, spills, overspray, or run-off occurs, the Plant Nutrient must be cleaned completely from the surface and be either:
 - 2. -contained or disposed of legally; or
 - 3. -applied to Non-agricultural Land, Non-agricultural Turf, or Lawn as allowed.
- (h) For the purpose of de-icing Impervious Surfaces; or-
- (i) To Drought dormant, cold dormant, inactive or otherwise brown turf.

(3) In determining the amount of nitrogen and phosphorus that may be applied, the amount of these Plant Nutrients known to have been applied in any Organic Compost, Natural Organic Fertilizer, Biosolids, Agricultural Byproducts or other nutrient containing materials shall be accounted for.

- (a) Application of phosphorus from these materials shall not exceed the maintenance phosphorus rates for turf as specified in UMass Guidelines. Any necessary adjustments in rates shall be made to comply with the UMass Guidelines.
- (b) Any application of Biosolids to land not used for agricultural purposes shall comply with the requirements of 310 CMR 32.00: *Land Application of Sludge and Septage.*
- (c) This requirement shall not apply to a single application of Organic Compost, Natural Organic Fertilizer, Biosolids, or Agricultural Byproducts made within a twelve (12) month period at an application rate not to exceed 0.25 lbs of P₂O₅p per 1,000 square feet.

(4) Any application of Biosolids to Non-Agricultural Land, Non-Agricultural Turf, and Lawns shall comply with the requirements of 310 CMR 32.00: *Land Application of Sludge and Septage.*

- ~~(4) No application of Plant Nutrients shall be made to any impervious surface, including parking lots, roadways, and sidewalks, by means of direct application, spills, overspray, or run off to impervious areas. If such direct application, spills, overspray, or run off occurs, the plant nutrient must be cleaned completely from the surface and be either:~~
- ~~(5) contained or disposed of legally; or~~
- ~~(6) applied to Lawn or Non agricultural Turf as allowed.~~

~~(5) In determining the amount of nitrogen and phosphorus that may be applied, the amount of these Plant Nutrients known to have been applied in any Organic Compost, Natural Organic Fertilizer, Biosolids, Agricultural Byproducts or other nutrient containing materials shall be accounted for. Application of phosphorus from these materials shall not exceed the maintenance phosphorus rates for turf as specified in UMass Guidelines for turf. Any necessary adjustments in rates of other Fertilizers or products shall be made to comply with the UMass Guidelines for turf. Any application of Biosolids to land not used for agricultural purposes shall comply with the requirements of 310 CMR 32.00: *Land Application of Sludge and Septage at an application rate not to exceed 0.25 lbs of P₂O₅ per 1000 square feet*~~

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31.06: Soil Testing for Plant Nutrients to Non-Agricultural Lands, Non-Agricultural Turf, and Lawns Land Not Used for Agricultural Purposes

(1) ~~A~~ Soil Test must be obtained prior to any initial application of any Plant Nutrient that contains phosphorus to Non-Agricultural Lands, Non-Agricultural Turf, or Lawns.

(2) A soil test for the application of Plant Nutrients is not required if:

~~(a) The application is made for the purposes of establishing Non-Agricultural Turf on bare ground;~~

~~(b)(a) The application is made in accordance with the turf establishment guidelines of the UMass Guidelines for turf establishment;~~

~~(c)(b) The land has been disturbed such as by construction or tillage; or~~

~~(d)(c) A Lawn Patch Product is used; or~~

(d) The application is made in accordance with 330 CMR 31.05(3)(c).

~~(2) If a soil test exists that is not more than three years old, it shall be used to determine the appropriate P_2O_5 application rate.~~

~~(3) No Person shall apply Phosphorus Containing Fertilizer to turf when over-seeding existing turf without basing the application on the results of a soil test.~~

~~(4) Any subsequent Phosphorus Containing Fertilizer applications to the same Management Unit shall be based on the results of a Soil Test.~~

(3) Soil Tests shall be valid for three years and only for the Management Unit on which the sample was collected. Any subsequent phosphorus applications to the same Management Unit shall be based on the results of a valid Soil Test.

~~(6) Soil Tests shall be associated with individual properties or Management Units.~~

(4) Standard Soil Test analyses shall be conducted by a laboratory using methods and procedures recommended by UMass Guidelines.

~~(8) To avoid erroneous test results or erroneous recommendations regarding the efficient use of Plant Nutrients, soil sampling shall be done in accordance with UMass Guidelines.~~

31.07: Record Keeping Requirements for Lawn/ Non-Agricultural Turf Applications:

~~(1) Any Person who applies Plant Nutrients, except those making non-professional applications, shall maintain records for three years of each application made. The following information shall be recorded, when applicable:~~

~~(a) Name of Applicator;~~

~~(b) Date of application;~~

~~(c) Address or location description of the application site;~~

~~(d) Soil Test results for Management Units;~~

~~(e) Type and amount of nutrients applied;~~

~~(f) Size of the area being treated;~~

~~(g) Representative nutrient value or values;~~

~~(h) Plant Nutrient analysis of product used, if nutrient values are unknown;~~

~~(i) Method and rate of application;~~

~~(j) Total amount used; and~~

~~(k) An original or legible copy of the label of the plant nutrient.~~

(2) Records may be kept electronically or in hard copy format and shall be made available for inspection by the Department upon request.

~~31.07: continued~~

31.07 Record Keeping Requirements

~~(1) Any Person who applies Plant Nutrients, except those making non-professional applications, shall maintain records for three years of each application made. The following information shall be recorded, when applicable:~~

- ~~(a) Name of Applicator;~~
- ~~(b) Date of application;~~
- ~~(c) Address or location description of the application site;~~
- ~~(d) Soil Test results for Management Units;~~
- ~~(e) Type and amount of nutrients applied;~~
- ~~(f) Size of the area being treated;~~
- ~~(g) Representative nutrient value or values;~~
- ~~(h) Plant Nutrient analysis of product used;~~
- ~~(i) Method and rate of application;~~
- ~~(j) Total amount used; and~~
- ~~(k) An original or legible copy of the label of the plant nutrient.~~

~~(2) The records required under 330 CMR 31.00 shall be made available for inspection by the Department upon request.~~

31.07: Record Keeping Requirements for Non-Agricultural Land, Non-Agricultural Turf, and Lawns

(1) Any Person who applies Plant Nutrients to Non-Agricultural Land, Non-Agricultural Turf, or Lawns shall maintain records of each application. The following information shall be recorded, when applicable:

- (a) Name of Applicator;
- (b) Date of application;
- (c) Address or location description of the application site;
- (d) Soil Test results for the property or Management Unit;
- (e) Type and amount of Plant Nutrients applied;
- (f) Size of the area on which the application is made;
- (g) Representative nutrient value or [analyzed values](#)
- (h) Method and rate of application;
- (i) Total amount used; and
- (j) An original or legible copy of the Label of the Plant Nutrient.

(2) Records shall be kept for at least three (3) years, may be kept electronically or in hard copy format, and shall be made available for inspection by the Department upon request.

(3) The record keeping requirements in 31.07 shall not apply to any Person making Non-professional applications of Plant Nutrients.

31.08: Retailer Requirements

Any ~~R~~etailer who sells, or offers for sale, Phosphorus Containing Fertilizer shall:

- (a) display the product separately from non-phosphorus Plant Nutrients; and
- (b) post in a location where Phosphorus Containing Fertilizer is displayed a clearly visible sign, at least 11" x 17" in dimension, which reads as follows: "PHOSPHORUS RUNOFF POSES A THREAT TO WATER QUALITY. THEREFORE, UNDER MASSACHUSETTS LAW, PHOSPHORUS CONTAINING FERTILIZER MAY ONLY BE APPLIED TO LAWN OR NON-AGRICULTURAL TURF WHEN (I) A SOIL TEST INDICATES THAT ADDITIONAL PHOSPHORUS IS NEEDED FOR THE GROWTH OF THAT LAWN OR NON-AGRICULTURAL TURF; OR (II) IS USED FOR NEWLY ESTABLISHED LAWN OR NON-AGRICULTURAL TURF DURING THE FIRST GROWING SEASON."

31.09: Enforcement; Assessment of Civil Penalty

(1) The Department may impose a fine on ~~any P~~erson who violates any provision of 330 CMR 31.08-0 as follows:

- (a) ~~N~~ot more than \$250 for a first violation, ~~a penalty of not more than~~ \$500 for a second violation, and \$1,000 for a third or subsequent violation; and

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(b) ~~E~~each day a violation occurs under 330 CMR 31.09~~(1)0~~ is a separate violation.

(2) In assessing a fine imposed under 330 CMR 31.09~~(1)0~~, the Department shall give consideration to the following:

- (a) ~~T~~he willfulness of the violation, the extent to which the existence of the violation was known to the violator, but uncorrected by the violator, and the extent to which the violator exercised reasonable care;
- (b) ~~A~~ny actual harm to human health and safety or to the environment, including injury to, or impairment of, the use of the waters or the natural resources of the Commonwealth;
- (c) ~~T~~he nature and degree of injury to, or interference with, general welfare, health, and property;
- (d) ~~T~~he extent to which the location of the violation, including location near areas of human population, creates the potential for harm to the environment or to human health and safety; and
- (e) ~~T~~he extent to which the current violation is part of a recurrent pattern of the same or similar type of violation committed by the violator.

31.10: Appeal

Any ~~P~~erson aggrieved by any decision of the Department over the assessment of a fine imposed under 330 CMR 31.00 may appeal by filing a notice of appeal with the division of administrative law appeals within ~~10~~~~ten~~ days of receipt of the notice of the fine pursuant to the provisions set forth in M.G.L. c. 128, § 2(k).

31.11: Exemptions

Educational institutions and researchers may apply to the Department for an exemption to 330 CMR 31.00 for research, education, and demonstration purposes.

REGULATORY AUTHORITY

330 CMR 31.00: MG.L. c. 128, §§ 2(k) and 65(A), as amended by St. 2012, c. 262.